

Application Number 09/900,482

Responsive to Office Action mailed August 9, 2005

REMARKS

This amendment is responsive to the Final Office Action dated August 9, 2005. Claims 1-4 and 6-55 remain pending.

Claim Rejection Under 35 U.S.C. § 103

In the Final Office Action, the Examiner rejected claims 1-4 and 6-55 under 35 U.S.C. 103(a) as being unpatentable over Krishnamurthy et al. (USPN 6,389,464) in view of Traversat et al. (USPN 6,052,720). Applicants respectfully traverses the rejection to the extent such rejections may be considered applicable to the claims as amended. The applied references fail to disclose or suggest the inventions defined by Applicants' claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Before addressing the individual claim rejections, the Applicants provide the following remarks to aid the Examiner in understanding some fundamental differences between the cited references and the claimed invention. In particular, it appears that the Examiner has misinterpreted the term "data center" as recited by each of Applicants' independent claims. For this reason, the Applicants clarify the term "data center" as used within the claims in view of the intrinsic evidence of record, i.e., the present application.

The term "data center" is used throughout the present specification and the pending claims. This term is clearly defined by the specification. In particular, the specification states that "a data center is a specialized facility that houses Web sites and provides data serving and other services for subscribers." The present application further describes a "data center" as an external facility that provides networking services for enterprises:

A data center is a specialized facility that houses Web sites and provides data serving and other services for subscribers. The data center may contain a network operations center (NOC), which is a restricted access area containing automated systems that constantly monitor server activity, Web traffic, and network performance and report even very slight irregularities to administrators so that they can spot potential problems before they happen. A data center in its most simple form may consist of a single facility that hosts all of the infrastructure equipment. However, a more sophisticated data center is normally an organization spread throughout the world with subscriber support equipment located in various physical hosting facilities.

Data centers allow enterprises to provide a number of different types of services, including e-commerce services to customers; extranets and secure VPNs to employees and customers; firewall protection and Network Address Translation (NAT) services, web

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caching and load balancing services, as well as many others. These services can all be provided at an off-site facility in the data center without requiring the enterprise to maintain the facility itself.¹

Applicants remind the Examiner that the claim terms must be construed in the context of the patent application. In the recent case, *Phillips v. AWH Corporation*, the Federal Circuit made very clear that the "ordinary meaning" of a term is the meaning within the context of the specification.² The Court reiterated that the specification is the "primary basis for construing the claims."³ While extrinsic evidence, such as dictionaries, can shed useful light on the relevant art, the extrinsic evidence is less significant than the intrinsic record in determining the legally operative meaning of claim language.⁴ According to the Court, when properly viewed, the "ordinary meaning" of a claim term is its meaning to the ordinary artisan after reading the entire patent.⁵

The present application states that "[c]ustomers of such managed service providers are called subscribers," and that many customers have turned to outsourced data centers to provide these services in lieu of building and maintaining the infrastructure themselves. The present application explains that "[t]hese services can all be provided at an off-site facility in the data center without requiring the enterprise to maintain the facility itself."⁶ Thus, in view of the context provided by the intrinsic evidence, the term "data center" clearly must be construed as an entire facility that provides data serving and other services to a plurality of customers.

Claim 1-27

All of Applicants' claims are directed to management of a data center. For example, claim Applicants' claim 1 is directed to a virtual management system for a data center. Claim 1 specifically recites a network device having a user interface that presents an administrative management hierarchy of objects that represent components of a network data center that provide applications and services to subscribers.

¹ Background.

² *Phillips v. AWH Corporation*, No. 03-1269 (Fed. Cir. July 12, 2005) (en banc) (emphasis added).

³ *Phillips*, at 14 (citing *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 452 (Fed. Cir. 1985)).

⁴ *Id.* at pg. 18.

⁵ *Id.*

⁶ Background

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In contrast, none of the reference cited by the Examiner even remotely related to management of an entire data center that provides application and services to different subscribers, i.e., customers. None of the references make mention of any external facility whatsoever that provides data application and services to different subscribers.

In rejecting claim 1, the Examiner states that Krishnamurthy teaches a virtual management system for a data center and cites the Abstract and Figures 1-3.⁷ The Examiner then asserts that Krishnamurthy teaches a network device having a user interface that presents objects that represent components of a network data center that provide applications and services to subscribers. Finally, the Examiner states that Krishnamurthy teaches a configuration manager implementing changes to the objects in the administrative management hierarchy responsive to configuration input from an administrator via the user interface.⁸

However, Krishnamurthy describes a system for remotely managing individual devices via a user interface. More specifically, Krishnamurthy teaches a system in which a "site server" provides a web-based interface for managing devices using the SNMP protocol. An individual of such a system may manage the devices physically coupled to the site server by accessing a web server hosted by the site server. In other words, Krishnamurthy merely describes an individual server (the "site server") capable of managing local devices.

Neither the Abstract nor FIGS. 1-3 nor any other portion of Krishnamurthy make mention of device capable of managing an entire a data center, i.e., a facility that provides applications and services to different subscribers, as required by claim 1. In whole, Krishnamurthy teaches a system wherein the user can configure the properties of individual devices.

With respect to claim 1, the Examiner correctly recognizes that Krishnamurthy does not disclose a "user interface that presents an administrative hierarchy of objects that represent components of a network data center." To overcome this deficiency in Krishnamurthy, the Examiner interprets Traversat to "disclose a virtual management system for a data center comprising: a network device having a user interface that presents an administrative management hierarchy of objects that represent components of a network data center that provide services to subscribers." In support of this assertion, the Examiner cites a passage of Traversat that spans

⁷ Office Action at pg. 3.

⁸ Id.

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from col. 6, line 41 to col. 8, line 59. This passage describes a hierarchy in which "the root of the tree is a root entry which does not contain any data." Col. 6, lines 45-46.

However, like Krishnamurthy, Traversat is also unrelated to data center management. Traversat describes a data schema for storing configuration information for an *individual client*.⁹ Contrary to the Examiner's assertion, the passage spanning from col. 6, line 41 to col. 8, line 59 cannot be interpreted to disclose an administrative management hierarchy of objects that represent components of a network data center that provide applications and services to subscribers, as required by claim 1. The n-way tree structure of Traversat stores configuration data for a *single machine*, i.e., client 105. Traversat explains that devices node 207 stores data for those devices on client 105, i.e., hardware devices installed on the client.¹⁰ Similarly, Traversat explains that software node 205 includes entries that relate to configuration data on software solely for that particular client.¹¹ In other words, the tree structure described by Traversat does not represent an administrative hierarchy of objects that represent components of an overall data center, as required by Applicants' claim 1. To the contrary, the tree structure described by Traversat is used to represent a *single device* and the devices and software installed on that single device. In now way does the tree structure described by Traversat provide a representation of an entire data center. For at least these reasons, it should be clear to the Examiner that Traversat fails to teach or suggest the administrative hierarchy of objects required by applicants' claim 1.

Applicants' dependent claims provide further evidence and clarity that Krishnamurthy does not teach a virtual management system for a data center, as required by Applicants' claims. For example, Applicants' claim 9 requires that "a *facility* object serves as a root of the administrative management hierarchy presented by the user interface, and the facility object includes children objects representing subscribers, log servers that record events within the data center, devices, and services of the data center." As discussed above, the term "data center" a *facility* that provides applications and services to different subscribers. Claim 9 specifically requires a *facility* object serves as a root of the administrative management hierarchy presented by the user interface. Claim 9 also requires that the facility object includes children objects

⁹ Title.

¹⁰ Col. 7, ll. 1-10.

¹¹ Id.

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representing subscribers, log servers that record events within the data center, devices, and services of the data center.

Krishnamurthy teaches a server for managing individual devices using the SNMP protocol. Further, Traversat makes clear that the Traversat tree structure only describes a single device and not an entire facility. Thus, Krishnamurthy in view of Traversat fail to teach or suggest use of a *facility object* as a root node. Moreover, Traversat states that the "root entry" of the Traversat hierarchy does not even contain any data.¹² Clearly this empty root node of Traversat cannot be construed as a facility object that represents the facility of the data center, especially given the fact that the entire Traversat hierarchy represents only individual client.

Similarly, dependent claim 10 is directed to a different embodiment in which "a subscriber object serves as a root of the administrative management hierarchy presented by the user interface." As described in the specification, a "subscriber object may have a list of infrastructure services that the subscriber has contracted with the data center."¹³ As before, by citing Traversat column, 6 line 31 through column 8 line 59, the Examiner implies that the "root entry" of the hierarchy in Traversat is equivalent to the highest node in the administrative management hierarchy in applicants claim 1. But if the root entry of the hierarchy "does not contain any data" as required in Traversat, how can the empty root entry of the hierarchy represent a subscriber of a data center, as required by claim 10? Clearly, the root node described in Traversat does not represent a subscriber of a data center when the entire Traversat only represents a single device.

Applicants' dependent claims 15-17 further illustrate that Traversat does not disclose an administrative management hierarchy of objects that provide applications or services to subscribers. For instance, claim 15 requires that a subscriber of the data center configure service objects. Neither Krishnamurthy nor Traversat even describe different subscribers of a data center, let alone objects that represent the subscribers or the different subscribers configuring their specific portions of the data center. Claim 16 requires that the service objects in the administrative management hierarchy include a subscriber virtual private network. Neither

¹² Col. 6, line 46.

¹³ Page 16, lines 8 - 9.

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Krishnamurthy nor Traversat make mention of a subscriber-specific virtual private network of a data center.

Claims 18 and 21 require that the service objects in the administrative management hierarchy include a firewall or a secure sockets layer (SSL) accelerator service, respectively. A firewall is "a piece of hardware and/or software which functions in a network environment to prevent some communications forbidden by the security policy." Wikipedia, "Firewall (networking)" (http://en.wikipedia.org/wiki/Firewall_%28networking%29). A secure sockets layer accelerator service is a "method of offloading the processor-intensive public key encryption algorithms involved in secure sockets layer transactions to a hardware accelerator." Wikipedia, "SSL Acceleration" (http://en.wikipedia.org/wiki/SSL_acceleration).

With regard to claims 18 and 21, the Examiner cited Krishnamurthy column 17 lines 35-65. This passage does not suggest either a firewall or a SSL accelerator service. The passage does not use the terms 'firewall' or 'SSL accelerator service.' Moreover, the passage does not even suggest a firewall or an SSL accelerator service. For instance, the passage does not mention the encryption algorithms central to SSL acceleration or the prevention of communication required by firewall technology.

Claims 28-37

Applicants' independent claim 28 requires a "configuration controller coupled to the devices in the data center". As discussed in relation to claim 1, network data center is not simply a collection of devices managed by a single enterprise. Rather, a network data center is a facility that provides data serving and other services to a plurality of different customer. Claims 28-37 are patentable for at least the reasons set forth above. For example, none of the references, either singularly or in combination, teach or suggest a system for managing a plurality of networking services provided by devices coupled to a network in a data center.

Moreover, the Examiner rejected claims 38-49 for the "same reasons set forth to rejecting claims 1-27 above." However, independent claim 28 includes many elements not found within claims 1-27, and the Examiner failed to consider or even comment on these elements. For example, claim 28 requires three separate interfaces: a subscriber management interface for the controller enabling device configuration based on a subscriber object

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representing a subscriber of the data center; a device management interface for the controller enabling device configuration based on a device object representing one or more of the devices; and a facility management interface allowing the administrator to configure objects in the system based on a facility object representing a geographic site of the data center. None of the references teach or suggest these interfaces.

Further, claim 28 requires that the configuration controller controls access to the service management interface, the subscriber management interface, the device management interface and the facility management interface in accordance with a hierarchy that relates the service object, the subscriber object, the facility object and the device object. None of the references teach or suggest an administrative hierarchy having these objects. As discussed above, Krishnamurthy describes a server for configuring individual devices, while Traversat describes a tree-like structure for representing the devices and software applications installed within single machine. Neither are concerned with administration of a data center that includes a facility for providing services to a plurality of customers.

Claims 38-49

Claim 38 requires a graphical user interface that presents components of a data center as a hierarchy of objects within the interface, and that the data center include devices that provide services to a set of subscribers. In addition, claim 38 requires service applications coupled to the graphical user interface objects, the applications controlling configuration of network objects responsive to the user interface. Further, claim 38 requires that the network manager interact with devices in the data center to implement changes responsive to the user interface.

The Examiner rejected claims 38-49 for the "same reasons set forth to rejecting claims 1-27 above." As discussed in relation to claim 1, network data center is not simply a collection of devices managed by a single enterprise. Rather, a network data center is a facility that provides data serving and other services to a plurality of different customer. Krishnamurthy and Traversat do not disclose a graphical user interface that presents components of a data center as a hierarchy of objects within the interface, and that the data center includes devices that provide services to a set of subscribers. Instead, Krishnamurthy teaches a system of managing particular devices.

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Krishnamurthy Col 4, line 57, and Traversat describes a tree-like structure for representing the devices and software applications installed within a single machine.

In addition, in rejecting claim 38, the Examiner asserts that Traversat discloses an interface for management of a network data center having service applications coupled to a graphical user interface objects and controlling configuration of network objects responsive to the graphical user interface, wherein the service applications are launched by service objects and hosted by the network manager. In support of this assertion, the Examiner cites Traversat figures 1-2, and 11; column 6 line 32 to column 8 line 36; and column 15 line 1 to column 17 line 19.

Applicant is confused how one of ordinary skill in the art would interpret the addition cited passages to teach or suggest these limitations. In particular, the passage spanning col. 6 line 32 through col. 8 line 36 do not mention any graphical user interface objects at all. In fact, this passage does not even describe how the hierarchy would be displayed. The passage spanning col. 15 line 1 through col. 17 line 19 does not disclose graphical user interface objects either. Instead, this passage provides a boilerplate description of a computing system that is capable of running the system disclosed in Traversat. Moreover, in view of the fact that the Traversat tree-like structure represents only a single machine, the Examiner has clearly failed to establish a *prima facie* case for non-patentability of Applicant's claims 38-49 under 35 U.S.C. 103(a).

Claims 50-54

With regard to each element of claim 50, the Examiner implies that the discussion of claims 1-27 above supplies sufficient evidence that Krishnamurthy teaches each element required by claim 50. However, Applicants express each element in claim 50 and dependent claims 51 - 54 relative to a network data center. As explained above, a network data center is a not simply a collection of devices. Rather, a network data center is a facility that provides data serving and other services to a plurality of different subscribers. The Examiner fails to identify any reference in Krishnamurthy or Traversat that describes a view for configuring component of an overall data center, let alone a facility object, a subscriber object, or a log server object. For example, because Krishnamurthy or Traversat deal with individual devices, there simply is no item described by Krishnamurthy or Traversat equivalent to a facility object.

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For at least these reasons, the Examiner has failed to establish a prima facie case for non-patentability of Applicant's claims 1-55 under 35 U.S.C. 103(a). Withdrawal of this rejection is requested.

CONCLUSION

All claims in this application are in condition for allowance. Applicants respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

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